

Serial No. 09/844,993
Attorney Docket No. 68156755.5008

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

1. (Presently amended) A method for mapping a descriptive language including a data description having a structure complexity into an object oriented programming language, comprising the steps of:

receiving the data description;

identifying a complex-type element in the data description; and

creating an executable object oriented class that is independently executable in any of a plurality of run-time environments ~~environment~~ and that corresponds to the identified complex-type element, wherein the class includes an internal static class, wherein the internal static class corresponds to the structure complexity of the data description.

2. (Previously presented) The method as recited in claim 1, wherein receiving the data description comprises receiving an XML Schema.

3. (Previously presented) The method as recited in claim 1, further comprising validating the data description.

4. (Previously presented) The method as recited in claim 3, wherein said validating further includes using a object finite state machine including a current state to verify a mutator method call against the current state of the object, wherein the data description is invalid when the mutator method call is initiated before the current state is complete.

Serial No. 09/844,993
Attorney Docket No. 68156755.5008

5. (Previously presented) The method as recited in claim 3, wherein said validating includes:

sending a request including said data description to a remote server; and
receiving a validity determination as to said data description.

6. (Previously presented) The method as recited in claim 3, wherein said validating includes:

reading said data description into a set of valid descriptor classes; and
creating a set of objects out of the data description wherein the occurrence of an object reflects validity.

7. (Original) The method as recited in claim 1, wherein said creating includes a set of object oriented classes selected from the group consisting of: Java, C++ and Smalltalk.

8. (Original) The method as recited in claim 1, wherein said creating includes representing a naming space with said internal static class to provide an implementation of said structure complexity.

9. (Presently amended) A method for mapping a Schema including a structural complexity into an executable object oriented programming language, wherein the object oriented programming language provides a one to one correspondence between the structural complexity of the Schema and the functionality of the object oriented programming language,

Serial No. 09/844,993
Attorney Docket No. 68156755.5008

the method comprising:

receiving said Schema;

validating said Schema;

creating a set of executable object oriented classes including a set of internal static classes that are independently executable in any of a plurality of run-time environments ~~environment~~ and to provide a mapping of the Schema into the object oriented language;

creating an instance corresponding to the object oriented classes;

compiling the instance to provide an object oriented programming code.

10. (Original) The method as recited in claim 9, wherein said validating includes using a object finite state machine including a current state to verify a function call against the current state of the object, wherein the Schema is invalid when the function call is initiated before the current state is complete.

11. (Previously presented) The method as recited in claim 9, wherein said validating includes:

sending a request including said Schema to a remote server; and

receiving a validity determination as to said Schema.

12. (Previously presented) The method as recited in claim 9, wherein said validating includes:

reading said Schema into a set of valid descriptor classes; and

creating an instance of a compiler class wherein the compiler class is described in the

Serial No. 09/844,993
Attorney Docket No. 68156755.5008

Schema.

13. (Previously presented) The method as recited in claim 9, wherein the set of object oriented classes comprises code selected from the group consisting of: Java, C ++, and Smalltalk.

14. (Original) The method as recited in claim 9, wherein said creating an instance includes representing a naming space with the internal static class to provide an implementation of said structural complexity.

15. (Presently amended) A computer readable medium containing programming which when executed performs the following:

receiving a data description;

identifying a complex-type element in the data description; and

creating an executable object oriented class that is independently executable in any of a plurality of run-time environments ~~environment~~ and that corresponds to the identified complex-type element, wherein the class includes an internal static class, wherein the internal static class corresponds to a structure complexity of the data description.

16. (Previously presented) The medium as recited in claim 15, wherein receiving the data description comprises receiving an XML Schema.

17. (Previously presented) The medium as recited in claim 15, further comprising validating the data description.

Serial No. 09/844,993
Attorney Docket No. 68156755.5008

18. (Previously presented) The medium as recited in claim 17, wherein said validating procedure further includes using an object finite state machine including a current state to verify a mutator method call against the current state of the object, wherein the data description is invalid when the mutator method call is initiated before the current state is complete.

19. (Previously presented) The medium as recited in claim 17, wherein said validating procedure includes:

 sending a request including said data description to a remote server; and
 receiving a validity determination as to said data description.

20. (Previously presented) The medium as recited in claim 17, wherein said validating procedure includes:

 reading said data description into a set of valid descriptor classes; and
 creating a set of objects out of the data description wherein the occurrence of an object reflects validity.

21. (Original) The medium as recited in claim 15, wherein said creating procedure includes a set of object oriented classes selected from the group consisting of: Java, C++ and Smalltalk.

22. (Original) The medium as recited in claim 15, wherein said creating procedure includes representing a naming space with said internal static class to provide an implementation

Serial No. 09/844,993
Attorney Docket No. 68156755.5008

of said structure complexity.

23. (Presently amended) A computer readable medium containing programming for mapping a Schema including a structural complexity into an executable object oriented programming language, wherein the object oriented programming language provides a one to one correspondence between the structural complexity of the Schema and the functionality of the object oriented programming language which when executed performs the following procedures comprising:

receiving said Schema;

validating said Schema;

creating a set of executable object oriented classes including a set of internal static classes that are independently executable in any of a plurality of run-time environments ~~environment~~ and to provide a mapping of the Schema into the object oriented language;

creating an instance corresponding to the object oriented classes; and

compiling the instance to provide an object oriented programming code.

24. (Previously presented) The medium as recited in claim 23, wherein said validating procedure includes using an object finite state machine including a current state to verify a function call against the current state of the object, wherein the Schema is invalid when the function call is initiated before the current state is complete.

25. (Previously presented) The medium as recited in claim 23, wherein said validating procedure includes:

Serial No. 09/844,993
Attorney Docket No. 68156755.5008

sending a request including said Schema to a remote server; and
receiving a validity determination as to said Schema.

26. (Previously presented) The medium as recited in claim 23, wherein said validating procedure includes:

reading said Schema into a set of valid descriptor classes; and
creating an instance of a compiler class wherein the compiler class is described in the Schema.

27. (Previously presented) The medium as recited in claim 23, wherein the set of object oriented classes comprises code selected from the group consisting of: Java, C ++, and Smalltalk.

28. (Original) The medium as recited in claim 23, wherein said creating an instance procedure includes representing a naming space with the internal static class to provide an implementation of said structural complexity.

29. (Presently amended) An apparatus for mapping a descriptive language including a data description having a structure complexity into an object oriented programming language, comprising:

means for receiving the data description;
means for identifying a complex-type element in the data description; and
means for creating an executable object oriented class that is independently executable in

Serial No. 09/844,993
Attorney Docket No. 68156755.5008

~~any of a plurality of run-time environments environment~~ and that corresponds to the identified complex-type element, wherein the class includes an internal static class, wherein the internal static class corresponds to the structure complexity of the data description.

30. (Previously presented) The apparatus as recited in claim 29, wherein said data description comprises an XML Schema.

31. (Previously presented) The apparatus as recited in claim 29, further comprising means for validating a data description.

32. (Previously presented) The apparatus as recited in claim 29, wherein said validating means further includes a object finite state machine including a current state to verify a mutator method call against the current state of the object, wherein the data description is invalid when the mutator method call is initiated before the current state is complete.

33. (Previously presented) The apparatus as recited in claim 29, wherein said validating means includes a web browser operable to send a request including said data description to a remote server for validation.

34. (Previously presented) The apparatus as recited in claim 29, wherein said validating means includes:

means for reading said data description into a set of valid descriptor classes; and

means for creating a set of objects out of the data description wherein the occurrence of

Serial No. 09/844,993
Attorney Docket No. 68156755.5008

an object reflects validity.

35. (Previously presented) The apparatus as recited in claim 29, wherein said object oriented classes comprise code selected from the group consisting of: Java, C++, and Smalltalk.

36. (Original) The apparatus as recited in claim 29, wherein said creating means includes means for representing a naming space with said internal static class to provide an implementation of said structure complexity.